Poster prepared for:

Underwater Noise Pollution: Impacts on Marine Life & Recommendations for International Regulatory Action

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The introduction of intense underwater energy sources such as the extremely loud sounds from high intensity active sonars, air guns and shipping constitute a form of pollution as defined in Article 1 (1) (4) of the United Nations Convention on the Law of the Sea (UNCLOS), if these sounds cause "harm to living resources and marine life, hazards to human health, hindrance to marine activities… (or) reduction of amenities."

A growing body of evidence confirms that intense human-generated noise in the marine environment can produce a range of adverse effects on marine mammals, including death and serious injury from tissue trauma, strandings, displacement from preferred habitat and other behavioral changes.[1,2] Studies also have demonstrated that airguns have the potential to injure and reduce catch rates of certain species of fish.[3] Thus, underwater noise may pose a threat to already depleted fish stocks in the world's oceans.

The use of technologies that produce intense underwater noise pollution may be in breach of Article 194(1) of UNCLOS which requires States to take all measures necessary to prevent, reduce and control pollution of the marine environment and Articles 204-206 which require States to assess potentially negative impacts on the marine environment.

International Concern about Underwater Noise Pollution

Acoustic energy is not restricted by national boundaries. There is growing consensus that undersea noise pollution should be regulated by responsible international institutions and several fora are addressing the problem.

The International Whaling Commission at its July, 2004 meeting agreed that noise should remain a standing priority on its agenda.

Military Sonar

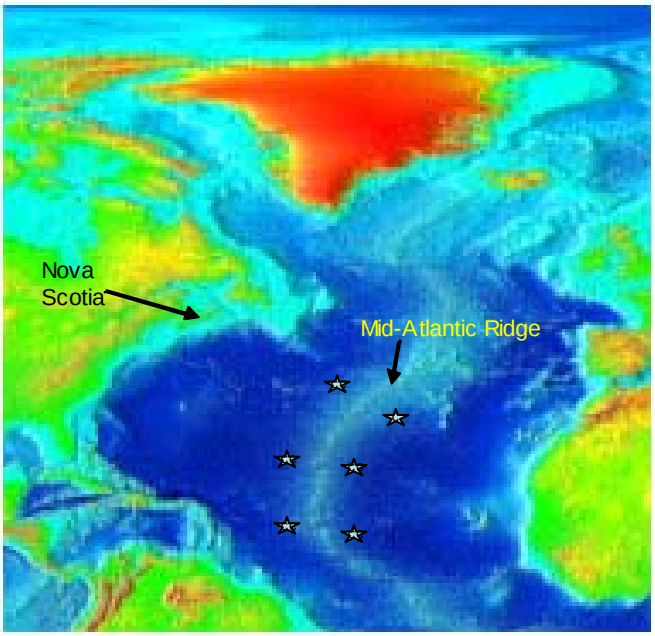
- The Scientific Committee agreed that:
  - There is compelling evidence that military sonar has a direct impact on beaked whales in particular
- Recommended that:
  - A full review of typical and atypical mass strandings involving beaked whales with other species be conducted
  - Past stranding data be analyzed relative to military activities
  - Standardized protocols for documenting and understanding mass stranding events be developed
  - Thorough, standardized *post mortems* of entire animals be performed at mass strandings

Beaked whale from Canary Islands stranding (September, 2002) correlated with the use of mid-frequency sonar during naval exercises involving several NATO countries. Eighteen scientists stated that necropsies on 6 whales showed acute and chronic tissue damage from in vivo formation of gas bubbles (decompression sickness). They called for their findings to be included in considering the regulation of sonar impacts on cetaceans.[2]

Seismic Operations and Shipping

- The Scientific Committee agreed that:
  - Increased sounds from ships and seismic activities are cause for serious concern
- Recommended that:
  - Increased effort be made to monitor strandings that occur at times and in places where seismic activity is conducted

- Critical habitats be independently monitored during seismic operations to evaluate displacement and behavioral disruptions
- Seismic operators seek ways to reduce the power of their sources
- Seismic surveys with potential adverse consequences for large whales be conducted when whales are not present
- If seismic surveys do occur in critical habitat, a strict monitoring and mitigation program be implemented including highly experienced, independent observers

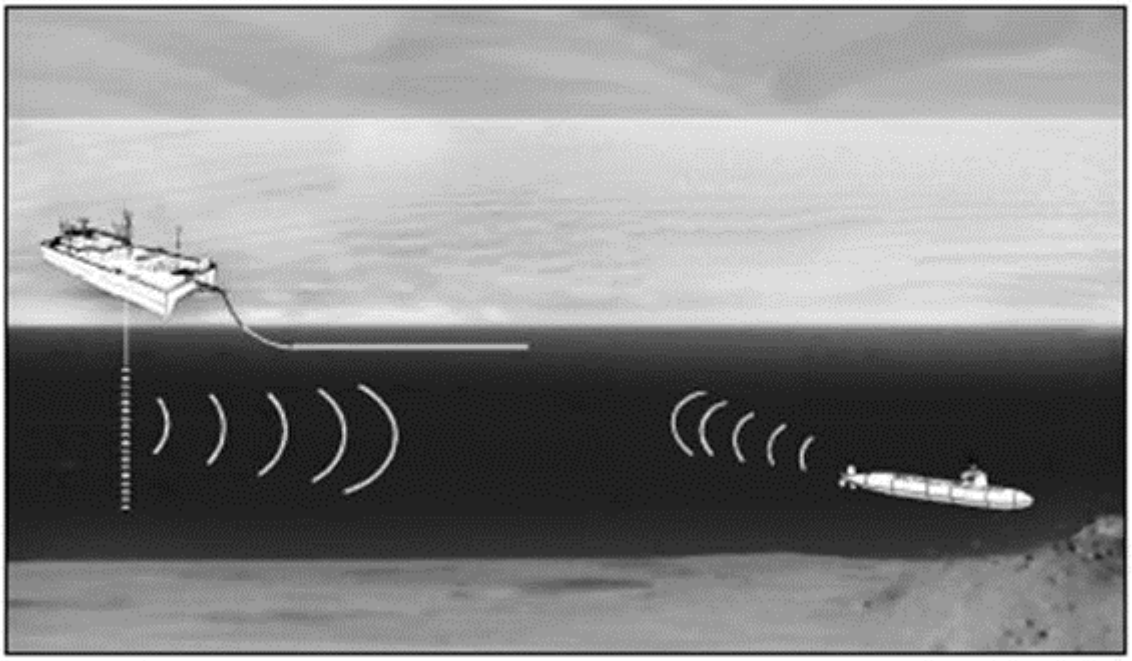


Nieukirk et al. 2003

Air guns off Nova Scotia are a predominant part of the background noise you hear through hydrophones that are in the mid-Atlantic 3,000 km away from the air guns.[4] *Use of air guns lowered fish catch rates in Norway over a 2,000 square mile area.*[3]

- The Scientific Committee:
  - **Recommended** that Noise Exposure Standards be included in national and international conservation plans (e.g. during designation of critical habitats and marine protected areas).
  - **Emphasized** the **Precautionary Principle** stating "that measures to protect species and habitats cannot always wait for scientific certainty."

Figure: Diagram of SURTASS/LFA System



Source: Navy.

One independent scientist analyzing some of the Navy's SOSUS data reported that a Low Frequency Active Sonar signal deployed off California was clearly audible at sites across the entire North Pacific.[5]

- **ASCOBANS** (Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas) recognizes the dangers of underwater noise pollution in its Conservation Management Plan and in 2003 passed a resolution endorsing a commitment to apply the Precautionary Principle to ocean noise.

- The Scientific Committee to **ACCOBAMS** (Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic

Area) issued a formal recommendation on Man-Made Noise urging extreme caution in using intense acoustic devices.

- **OSPAR** (guides international cooperation on the protection of the marine environment of the North-East Atlantic) recognizes the problem of anthropogenic noise in its "Guidelines for the Management of Marine Protected Areas" and at its 2004 meeting directed the Secretary to prepare a report to further assess noise impacts from offshore activities.

- **The International Maritime Organization** recognizes that noise from ship traffic is a hazard to the marine environment.

North Atlantic Treaty Organization

In October 2003, a delegation of scientists, Members of the European Parliament and environmental NGO's met with NATO representatives to discuss mitigation and regulation of high intensity active sonars. They delivered two petitions: one signed by 100,000 European citizens and another signed by 69 environmental organizations in North America and Europe representing a total membership of 8.3 million people.

Both petitions called for a moratorium on deployment of Low Frequency Active Sonar until a transparent environmental assessment is prepared. The second petition requested that the North Atlantic Council work with the EU and its member states to initiate formation of a Multinational Task Force to develop international agreements regulating noise levels in the world's oceans.

The delegation emphasized they were especially interested in having regulatory measures adopted to protect cetaceans and fish. The meeting chair stated that the fact that the meeting took place underlined NATO's commitment to work on the issue.

Members of the European Parliament, scientists and environmental NGO's deliver petitions to NATO representing 8.3 million people in Europe and North America. Petitions call for international regulation of underwater noise.

United Nations

In June 2004, an NGO delegation representing 70 environmental groups in the US and Europe attended the Fifth United Nations Informal Consultative Process on Oceans and the Law of the Sea. They gave a presentation to delegates on the scientific and legal aspects of intense underwater noise pollution as well as an overview of relevant political action directed towards international regulation of ocean noise.

References

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